

REMARKS

This reply is submitted in response to the Office Action dated February 22, 2008 and the Advisory Action dated July 7, 2008 and also as the submission required under 37 CFR § 1.114 accompanying a Request for Continued Examination. Reconsideration of the application is requested.

Claims 2-6 and 9-33 are present in this application. Claims 1, 7 and 8 are canceled. Claims 18-33 stand withdrawn. Claims 2-6 and 9-16 stand rejected. Claims 2, 16, 29, 30, 31 and 33 are currently amended. Support is found in the claims as originally filed.

Please note that the claims have been amended to further define Y and to insert bromide, chloride and iodide in the descriptions of X. The Examiner is reminded that in the office action dated August 17, 2006, paragraph 6, the previous Examiner withdrew the rejection of claim 1 over Sumi (US 6,323,353) when Applicant amended a Markush group into "Y" in claim 1. All independent claim now have specific "Y" groups and thus are patentable over Sumi.

Previously, Applicant had deleted halogens from the definition of X (see response dated June 7, 2006) in response to a rejection over Sumi. Note that halogen has been reinserted into the claims, *however*, all claims now have a specific set of Y groups and exclude the binaphthyl's of Sumi, just as Claim 1 did. Thus the current claims are novel and non-obvious over Sumi for the same reason that claim 1 was novel and nonobvious in the office action dated August 17, 2006.

Rejoinder

Applicant requests rejoinder of withdrawn claims 18-33 upon any future indication of allowability.

Rejection under 35 USC § 103(a)

Claims 2-6 and 9-16 are rejected under 35 USC § 103(a) as being unpatentable over Buchwald in view of Qian (*Synthesis and Polymerization behavior of Various Substituted Half-Sandwich Titanium Complexes Cp'TiCl2(OR*) as Catalysts for Syndiotactic Polystyrene*, J. Mol. Cat. 208, 2004, 45-54). The Examiner admits that Buchwald does not disclose hydrocarbyls

but suggests that Qian teaches substituting hydrocarbyls for halogens. Respectfully, this is a broad overstatement that is simply not correct. As evidence to support this position please see the declaration of Dr. Jo Ann Canich attached hereto. Specifically Dr. Canich explains why hydrocarbyls and halogens are not equivalent, with examples in borate and alumoxane containing systems.

The Examiner also suggests that Buchwald discloses "polymer preparation". Applicant respectfully disagrees and submits that Buchwald's references to "polymers" in column 1, lines 16-20 and column 16, line 56 are meant to describe reactions that can be performed *with* or *on* polymers not reactions to *make* polymers. As evidence to support this please see Dr. Canich's Declaration at paragraph 5.

Furthermore, Qian is directed to group 4 metal compounds used to make polyolefins. Applicant's invention is directed to group 8, 9, and 10 metals. One of ordinary skill in the art would not look to a Group 4 reference for Group 8, 9 and 10 guidance. Complicated late transition metal alkyl complexes are harder to make than Group 4 alkyl complexes because they are significantly less stable. Further, the fact that diethyl zinc is commercially available is irrelevant to Applicant's claimed invention. Diethyl zinc is not a polymerization catalyst. Diethyl zinc is actually a chain termination agent in certain polymerization systems. Thus, the Group 4 reference and the ability to buy diethyl zinc does not offer any significant insight for one of ordinary skill in the art.

Furthermore, Applicant disagrees that it is obvious to substitute halogens for alkyls on grounds that it has long been established that ... "*The effect of a modification of one prior art catalytic process in a manner employed in another prior art process which employs a different catalyst is unpredictable.*" Ex parte Bergeretal, (POBA 1952) 108 USPQ 236. Just because a chemical component works in one catalyst system, does not mean it will automatically work in another. Furthermore, in KSR International co. vs Teleflex, Inc (550 US. (2007), Slip opinion No. 04-1350) the US Supreme Court recognized that "*a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. ... This is so because inventions in most, if not all, instances rely upon building*

blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what in some sense, is already known. " (Slip opinion, page 15). Thus, it is clear that using Applicant's specification as a map to cobble together something that appears to be Applicant's invention is not sufficient under 35 USC § 103 to prove obviousness.

Applicant respectfully submits that this is what is happening here. Buchwald discloses ligand-metal complexes and methods to use them in reactions, such as Suzuki coupling, amination, diaryl ether synthesis, ketone arylation and Heck reactions (Buchwald Figure 1, column 1, line 65- to column 2, line 1). Buchwald is for use in small molecular synthesis and does not relate to olefin oligomerizations/polymerizations and catalyst compounds for such. One of ordinary skill in the oligomerization or polymerization art would not look to Buchwald for oligomerization or polymerization catalyst compounds. It is only with hindsight reconstruction that one would find Buchwald and combine it with Qian and then use it for polymerization or oligomerization.

Examiner's Response to Previous Arguments.

The Examiner has responded to previous arguments by making several conclusory statements that do not properly support a finding of obviousness (see MPEP § 2143 (pg 128 "rejections based on obviousness cannot be sustained with mere conclusory statements"). Furthermore, the Examiner's statements purported to set out scientific "theories that hold true under most conditions." With regard to such theories, MPEP § 2144.02 states: "*The rationale under 35 USC § 103 may rely on logic and sound scientific principle (citations omitted).* However, when an examiner relies on a scientific theory, evidentiary support for the existence and meaning of that theory must be provided." (citations omitted)

In the response filed June 20, 2008 Applicant respectfully requested that the Examiner provide evidentiary support for the existence and meaning of that theories stated in the office action dated February 22, 2008. The Examiner has not done so. Applicant respectfully requests that the Examiner either provide a citation or a declaration supporting his assertions. Broad statements that "any organic text book" or that "there are mountains of data to support these observations" are insufficient under the MPEP to specifically identify the art cited and the

reasoning for the rejection. The Examiner also responded in his Advisory Action that he did not have to support his 9 statements because Applicant had not proved the Examiner incorrect. Applicant respectfully disagrees. Applicant is not required to prove the Examiner's unsupported theories to be wrong before Applicant may require a citation or a declaration from the Examiner. (See MPEP § 2144.02). Likewise use of the theories to "rebut Applicant's argument" does not relieve the Examiner of this burden either. If they are being used to rebut Applicant's argument, they are automatically being used to support the rejection. Hence a citation or declaration under MPEP § 2144.02 is required.

Finally, the Examiner suggests that Applicant is merely tuning the catalysts of Buchwald in view of Qian. Applicant respectfully disagrees. If this were so, the "tuned" systems would make the small molecules better, faster or cheaper, e.g. it would aminate faster, or arylate to higher conversion rates. It would not make a completely different material, like Applicant's polymers. This is an important distinction because as a general rule small molecule catalysts change a single molecule in some way (aminate it, arylate it, etc) whereas oligomerization/polymerization catalysts take multiple molecules and string them together into chains with multimeric repeat units (typically on the order of 10's to 1000's or even 10,000's of units or more). This is a fundamentally different way of performing chemistry. One of ordinary skill in the art does not look to a coupling catalyst or amination catalyst to make a polymer or oligomer. As evidence to support this conclusion please see the Dr. Canich's declaration attached hereto.

In light of the above, Applicant respectfully request that the rejections be withdrawn.

Information Disclosure Statement

Applicants also submits an Information Disclosure Statement containing references cited by Dr. Canich in her declaration.

Related Application

This application relates to similar subject matter in USSN 10/692,827, filed October 24, 2003. The Examiner is encouraged to review both applications in light of each other.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and respectfully requests notice of such.

Please charge any deficiency in fees or credit any overpayments during the entire pendency of this case to Deposit Account No. 05-1712. Please also charge any petition fees, including fees for extensions of time necessary for the pendency of this case or copendency of this application with another application at any time to Deposit Account No. 05-1712. Any comments or questions concerning the application can be directed to the undersigned at the telephone number given below.

Respectfully submitted,

Date: July 18, 2008

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